

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Currently Amended)** A thermal processing apparatus for heating a substrate by irradiating flashlight to said substrate, comprising:

a plurality of bar-like flash lamps, each having an elongated cylindrical shape;

a lamp house for storing said plurality of flash lamps in such a state that a longitudinal direction of each of said plurality of flash lamps extends in a substantially horizontal direction, and that said plurality of flash lamps are arranged in parallel in a substantially horizontal direction that is substantially perpendicular to said longitudinal direction;

a chamber for storing a substrate, the chamber [[and]] being disposed below said lamp house; and

a transport robot for loading and unloading a substrate by advancing and retracting a transport arm with respect to said chamber; wherein:

the length of each of said plurality of flash lamps being greater than an outside dimension of said chamber, and

said lamp house is disposed such that a direction of substrate loading and unloading by said transport robot is substantially perpendicular to said longitudinal direction.

2. **(Currently Amended)** The thermal processing apparatus according to claim 1, wherein

said plurality of flash lamps are xenon flash lamps.

3. **(Currently Amended)** The thermal processing apparatus according to claim 2, wherein

said chamber and an indexer are disposed on both sides of said transport robot along said direction of substrate loading and unloading.

4. **(Currently Amended)** The thermal processing apparatus according to claim 3,
wherein

 said chamber has a cylindrical shape and has a disk-like heating plate on which a
 substrate is mounted and preheated prior to irradiation of flashlight, and

 the length of each of said plurality of flash lamps is greater than the outside diameter of
 said chamber.

5. **(Original)** A thermal processing apparatus for heating a substrate by
irradiating flashlight to said substrate, comprising:

 a plurality of lamp houses, each lamp house storing a plurality of bar-like flash lamps in
 such a state that a longitudinal direction of each of said plurality of flash lamps extends in a
 substantially horizontal direction, and that said plurality of flash lamps are arranged in parallel in
 a substantially horizontal direction that is substantially perpendicular to said longitudinal
 direction;

 a plurality of chambers for storing a substrate, each chamber being disposed below each
 of said plurality of lamp houses; and

 a transport robot for loading and unloading a substrate by advancing and retracting a
 transport arm with respect to each of said plurality of chambers, wherein;

 all of said plurality of lamp houses are disposed such that a direction of substrate loading
 and unloading by said transport robot is substantially perpendicular to said longitudinal direction
 of said plurality of flash lamps.

6. **(Currently Amended)** The thermal processing apparatus according to claim 5,
wherein

 said plurality of lamp houses are three lamp houses, and

 said three lamp houses are disposed 90° apart around said transport robot.

7. **(Currently Amended)** The thermal processing apparatus according to claim 6,
wherein

 said plurality of flash lamps are xenon flash lamps.

8. **(Currently Amended)** A thermal processing apparatus for heating a substrate by
irradiating flashlight to said substrate, comprising:

 a plurality of bar-like flash lamps, each having an elongated cylindrical shape;

 a lamp house of a rectangular shape, said lamp house storing said plurality of flash lamps
in such a state that a longitudinal direction of each of said plurality of flash lamps extends in a
longitudinal direction of said rectangular shape, and that said plurality of flash lamps are
arranged in parallel in a substantially horizontal direction that is substantially perpendicular to
said longitudinal direction of said rectangular shape;

 a chamber for storing a substrate, said chamber [[and]] being disposed below said lamp
house; and

 a transport robot for loading and unloading a substrate by advancing and retracting a
transport arm with respect to said chamber, wherein:

the length of said lamp house in said longitudinal direction being greater than an outside
dimension of said chamber, and

 said lamp house is disposed such that a direction of substrate loading and unloading by
said transport robot is substantially perpendicular to said longitudinal direction of said lamp
house.

9. **(Currently Amended)** The thermal processing apparatus according to claim 8,
wherein

 said plurality of flash lamps are xenon flash lamps.

10. **(Currently Amended)** The thermal processing apparatus according to claim 9,
wherein

said chamber and an indexer are disposed on both sides of said transport robot along said direction of substrate loading and unloading.

11. (Currently Amended) The thermal processing apparatus according to claim 10, wherein

said chamber has a cylindrical shape and has a disk-like heating plate on which a substrate is mounted and preheated prior to irradiation of flashlight, and

the length of said longitudinal direction of said lamp house is greater than the outside diameter of said chamber.

12. (Original) The thermal processing apparatus for heating a substrate by irradiating flashlight to said substrate, comprising:

a plurality of lamp houses of a rectangular shape, each lamp house storing a plurality of bar-like flash lamps in such a state that a longitudinal direction of each of said plurality of flash lamps extends in a longitudinal direction of said rectangular shape, and that said plurality of flash lamps are arranged in parallel in a substantially horizontal direction that is substantially perpendicular to said longitudinal direction of said rectangular shape;

a plurality of chambers for storing a substrate, each chamber being disposed below each of said plurality of lamp houses; and

a transport robot for loading and unloading a substrate by advancing and retracting a transport arm with respect to each of said plurality of chambers, wherein:

all of said plurality of lamp houses are disposed such that a direction of substrate loading and unloading by said transport robot is substantially perpendicular to said longitudinal direction of said plurality of lamp houses.

13. (Currently Amended) The thermal processing apparatus according to claim 12, wherein

said plurality lamp houses are three lamp houses, and

said three lamp houses are disposed 90° apart around said transport robot.

14. (Currently Amended) The thermal processing apparatus according to claim 13, wherein

said plurality of flash lamps are xenon flash lamps.

15. (New) The thermal processing apparatus according to claim 1, wherein the length of each of said plurality of flash lamps is not less than two times the inside dimension of said chamber.

16. (New) The thermal processing apparatus according to claim 8, wherein the length of said lamp house in said longitudinal direction is not less than two times the inside dimension of said chamber.